

## New Belt Relieves Officers' Back Pain

*The law of unintended consequences says that every improvement made in one area creates a corresponding disruption in another.*

The law holds true at the California Highway Patrol, where the Department's shift from a .38 to a .40-caliber weapon led to a spate of back and hip injuries. Not from the weapon, but from the duty belt where the gun is holstered.

The Personnel and Training Division, which takes a very active role in injury reduction and prevention, conducted a study on the belt in 1997. The outcome of the study was the 1998 purchase of a new duty belt for over 6,700 uniformed CHP officers.

Back and hip injuries rose after the 1991 adoption of the 40-caliber semi-automatic as the standard duty weapon. The new weapon required a new holster and double ammunition pouch, which added nearly 2 pounds to the weight of equipment hung on the old 2 1/4-inch wide, black leather belt.

The regulation belt carries a weapon, two magazines, baton, handcuffs, radio extender and pepper spray. The old leather belt, complete with equipment, weighed 11 pounds, 2 ounces.

"Beginning in April 1991 we noticed a steady increase in duty-belt related injuries and complaints of duty-belt pain," said Lieutenant Jill Angel, commander of the Division's Health and Safety Section. "Since then, 41 additional claims have been reported, most commonly among women officers and slender male officers."

To deal with the problem, the Personnel and Training Division hired a University of California ergonomics professor to do a year-long study. He concluded the width, rigidity and hard edge of the belt, the weight of the gear, and the metal shank of the holster all contributed to the injuries.

Over the next several months, a group of 29 officers injured or uncomfortable with the duty belt and seven injury-free officers tested various belts. The winner was the Mirage Nytek nylon belt.

"The new belt basically saved my job," said Officer Catherine Beauregard. Pain began 45 minutes to an hour after she put the belt on and, over a period of years, became so intense she was unable to do her job properly.

"They took me off the road for almost a year," she said. "At that point, I became part of the study." The thinner, lighter, more pliable belt and a new holster relieved nerve and back discomfort. Today she has returned to the road virtually pain free.

An unexpected benefit was its popularity among uninjured officers. "For a long time, I had a numb sensation in my hip, but I didn't pay any attention to it," said Sergeant Lori Harmon. "Within three weeks of wearing the new belt, the numbness was gone."

The rounded and padded edges of the two-inch Nytek belt eliminated the pressure exerted by the inflexible edges of the old belt on a nerve that produces pain in the thigh.



OFFICER CHRISTINE DION wears the new thinner and more flexible duty belt. The belt has eliminated pain and increased comfort for many officers.



Officer Dwight McDonald was a board member of the California Association of Highway Patrolman when he listened to a presentation on the belt at a meeting. The Personnel and Training Division needed guinea pigs for the study's control group and McDonald volunteered. His first day, he worked a full shift plus overtime.

"It was the most comfortable belt I'd ever worn," McDonald said. The belt could be adjusted very precisely with Velcro rather than more loosely by punching new holes in the leather. "I didn't feel like I wanted to take it off when I ate because it was too tight," he said.